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ORIGINAL PAPER

Using implementation science to build intimate partner violence screening and referral capacity in a fracture clinic

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Abstract

Rationale, aims, and objectives: Over the past two decades, research informing good clinical practices related to intimate partner violence (IPV) has been plentiful, yet partner violence screening remains challenging to translate into action. In spite of the documented efficacy of routine screening for women of reproductive age and the availability of validated screening instruments, many IPV screening programmes lack the components necessary for success. In Toronto, a multidisciplinary team of researchers and clinicians is using the tools of implementation science to scale up an evidence-based IPV screening and response programme in an urban orthopaedic clinic where prior screening attempts have been ineffective.

Methods: Using the Active Implementation Framework as a guide, researchers collected data across multiple sources to inform the first stage of implementation. Analysis focused on identifying the characteristics of the clinic that support or hinder implementation of new processes, evidence-based screening practices that fit with the clinic, and characteristics of a strong implementation team.

Results: Through this process, researchers and clinicians uncovered organizational strengths and weaknesses related to IPV screening that may not have been identified previously. The need to incorporate technology into our screening processes became apparent, as did the importance of shared communication and colearning between clinicians and researchers.

Conclusions: The benefits of investing in the preparatory phases of implementation are discussed. Without undertaking the process of gathering and analysing data, examining the factors that support effective and sustainable implementation, and investing in the creation of a strong implementation team, it is likely that decisions about our screening approaches would have resulted in a less-effective and sustainable process.

KEYWORDS

Active Implementation Framework, implementation science, intimate partner violence, outpatient clinic, screening

1 | INTRODUCTION

As a growing body of evidence makes clear, intimate partner violence (IPV) negatively impacts the health of millions of women, children, and families across North America annually.¹⁻³ Effective screening tools have been validated across multiple populations, and sufficient research exists to support the efficacy of routine screening programmes with clear protocols, thorough provider training, and supportive, appropriate referrals and response.⁴ Professional health associations across the United States and Canada have adopted policy statements supporting routine IPV screening for all women of reproductive age,^{8,9} and under the US Affordable Care Act, IPV screening and counselling is considered a prevention service that must be covered by insurance.^{9,10}

Despite these recommendations, many health centre-based IPV screening programmes lack the components necessary for success, including the use of consistent, evidence-based practices, concrete protocols, administrative support for screening, ongoing provider and staff training, and linkages with community resources.^{9,11-13} Even when research-driven approaches are identified and attempted, integrating these practices into busy clinical settings is challenging. Wellidentified impediments to screening, the complex nature of IPV, and the need to ensure safety for patients and providers combine with a lack of attention to the process of implementation, resulting in ineffective and often frustrating experiences for clinical staff and patients alike.^{12,14-16} Important aspects of the clinic infrastructure need to be addressed (eg, patient privacy and confidentiality),¹⁷ staff and provider trauma histories need to be considered,¹⁴ and the development of clinic-wide protocols and ongoing training must be integrated into the clinic environment.^{9,12,18} Additionally, appropriate responses to IPV disclosure require the engagement of multiple systems, adding to the intricacy of partner violence screening programmes.^{9,14}

Implementation science experts argue that new programmes often collapse because of inadequate investment in implementation.^{19,20} Implementation research centres emphasize understanding the mechanisms that promote "the systematic uptake of research findings"²¹ in everyday practice, including contextual, organizational, and programmatic factors.²² For example, interventions need to fit with the setting, taking "real-world" situations into account.^{22,23} Key stakeholdersincluding those most affected by the innovation or programmeshould be involved in all levels of decision making about the intervention.^{23,24} While advocacy organizations such as Futures Without Violence have long argued for carefully planned interventions that are tailored to the needs of a specific clinic and build staff and provider buy-in,¹⁷ implementation science takes this process further, providing an approach to programme implementation that is methodologically rigorous and based on systems research.^{25,26} In the followup to a 2012 symposium centred on improving responses to violence against women, Decker et al specifically call for the use of implementation science frameworks as a strategy to improve the implementation and scale-up of screening programmes.²⁶

The current project began as a partnership between a clinician scientist at an outpatient fracture clinic and the director of an urban population health research centre within the same hospital system. Despite previous documentation that approximately one-quarter of female patients in that clinic experienced IPV in the year prior to their fracture^{27,28} and the presence of staff who were concerned about and motivated to act on disclosure of IPV, the clinic was unable to sustain a routine, evidence-informed IPV screening programme.* Meanwhile, scientists from the centre with expertise in IPV research had recently completed an environmental scan that showed low levels of evidence-based IPV screening practices in local hospitals²⁹ and had been considering using their expertise in evaluation to apply implementation science to screening practices as an approach to improvement. An internal competition for research funds to support clinic initiatives provided further impetus for establishing a sustained, routine IPV screening effort in the fracture clinic.

This article describes how an interdisciplinary team of researchers and practitioners is using and adapting the Active Implementation Framework (AIF)³⁰ to scale up an evidence-based IPV screening and response programme in an urban orthopaedic clinic where prior screening attempts have been ineffective. Our goals in telling this story are to describe our experience with tailoring the AIF to the context of IPV in a busy clinic setting and adapting its activities and tools while maintaining fidelity to the core elements of the model. We highlight this process because we believe that this upfront work is often overlooked by practitioners and administrators in busy clinical settings, eager to move past "planning" activities and into action. Yet both research and experience suggest that investing the time to intentionally learn about and plan for implementation is a critical component for long-term success. While we hope that this will inspire others to build on our findings to strengthen IPV screening programmes, we also believe that our processes and lessons learned translate across clinical settings and innovations.

2 | METHODS

2.1 | Implementation science framework

While a plethora of implementation science frameworks, models, and constructs exist,^{31,32} we selected the model of National Implementation Research Network (NIRN), often referred to as the Active Implementation Framework (AIF), because of its comprehensive and operational nature. Because implementation is not a single event, the AIF outlines *stages*, moving from exploring the possibility of an organization adopting the intervention, to preparing the landscape and "installing" it, to initial implementation, and later full implementation.^{19,30}

The AIF process also emphasizes four key components to implementation.^{19,30} First, a *usable intervention* needs to be well defined, based in evidence, and well operationalized. Second, key *implementation drivers* or components related to the infrastructure of the

^{*}In the months prior to starting this project, clinic staff initiated a screening programme that consisted of setting a form with a single question on the treatment beds for each patient to complete.

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2.2 | Adaptation of AIF

AIF, initially designed for the education sector, had to be adapted to a health care clinic setting. As with evidence-based programme adaptations, effective modification of implementation frameworks requires attention to the original theoretical platform to ensure fidelity to the model while still attending to the unique characteristics of the intervention, setting, and participants.³¹ Early on, research team members went through each of the stages, tools, and components available through the NIRN, noting how our initial understanding of the clinical environment and the intervention would affect the usability of these items. Along with our clinical partners, we then established an Implementation Support Team (IST) consisting of research and clinical staff, with an emphasis on including staff who the intervention would directly impact.²⁴ The IST serves as the steering committee for the project, providing feedback to the research team and leadership within the clinic.

2.3 | Exploration

The *Exploration* stage of the AIF focuses on preparatory assessments often overlooked during implementation, such as reviewing past quality improvement processes and programme implementation experiences, identifying the need for new practices, and deciding whether the organization has the capacity to implement the new practice.²⁹ We identified three central objectives for this stage: (a) examining the organizational context for change (eg, how new processes have been previously implemented); (b) identifying strengths and challenges involved with IPV screening in this clinical setting; and (c) building relationships through the creation of a strong IST.

Over the course of Exploration, the research team met twice monthly to discuss the implementation science and screening literature, refine the AIF tools, develop the key informant interview guides, and analyse data gathered from interviews, observations, and current screening practices. We met approximately 10 times for roughly 30 minutes with the IST over a 12-month period, discussing project updates, data findings, challenges, successes, and next steps. Timelines and tasks were reviewed at each meeting to maintain a shared understanding of expected roles and responsibilities among both research staff and the IST during each implementation stage. The tools and data associated with Exploration were reviewed with the IST to compare whether findings reflected the realities in the clinic and to allow them to provide input on priorities identified by the research team (eg, assess staff needs, identify existing barriers, and assess competency on implementation drivers).

2.4 | Data collection

Data for this paper came from a variety of sources. First, we consulted the research literature to (1) identify the most appropriate implementation science framework for our purpose, (2) ensure that our intervention was evidence informed, and (3) identify known barriers that our team should consider as we design and implement a tailored IPV screening programme.

A second source of information came from key informant interviews with clinic staff. These were guided by our *Clinical Context Interview Guide* (adapted from an AIF tool)^{34,35} and focused on assessing contextual factors and current practices related to the implementation drivers (see Table 1). The interviews covered topics critical to Exploration, such as past experiences with clinic innovation or quality improvement, and the strengths or weaknesses related to leadership and systems change. Interviews were conducted confidentially, and no names were associated with the data when conducting or reporting on the analyses.

Finally, the minutes from the IST and research team meetings were found especially pertinent to examining lessons learned. We paid

TABLE 1 Use of the clinical context interview guide in Exploration^a

Implementation Driver	Definition of Driver	Examples of Questions Asked
Competency driver	This driver includes a specific consideration of recruitment and selection, training, coaching, and performance assessment (fidelity).	How were you made aware of your responsibilities related to quality improvement projects?
Organization driver	This driver specifically assesses areas of data collection, monitoring and feedback systems, facilitative administrative supports, and systems intervention.	When a new project is implemented in the clinic, is anyone assigned to oversee the implementation process? Do you sense that leaders at all levels in the organization support quality improvement?
Leadership driver	This driver assesses the relationship between clinic administrators or leaders and front line clinic staff during the implementation of a new practice. There are specific focus guidelines for resolving problems and leaders' role in ensuing front- line staff understand reasons for clinic change.	How would you describe the relationship between leaders and front-line staff? Can you tell me about how leaders communicated with staff about a new project?

 $^{^{\}rm a}{\rm Interview}$ guide adapted from the National Implementation Research Network's ImpleMap interview process. 30

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particular attention to challenges related to adapting and implementing the AIF in a health care setting and with creating and maintaining a strong IST. We also focused on strategies used to ensure that our team was inclusive, functioning effectively, and adhering to our project timeline.

3 | RESULTS

3.1 | Examining the context for change

Because the NIRN's framework was not originally developed for health care settings, we struggled to adapt some of the tools to be usable in a busy, outpatient orthopaedic clinic. This was especially true as we worked to understand the "implementation landscape" of the clinic, a critical aspect of assessing organizational readiness for taking on a new process.³¹ NIRN recommends conducting interviews with key staff (ImpleMap interviews)³¹ and provides an overview of content to include. Not only was this tool more time intensive than would be practical, but it included questions that were not relevant for our setting nor our intervention. Two research team members examined each question in the original tool and determined the construct that was being measured. We identified approaches to measure that construct that were based on our knowledge of clinic operations. We created our Clinical Context Interview Guide, tailoring it for our clinic and addressing processes relevant to IPV screening (described earlier and in Table 1). Research team members interviewed 11 clinic employees from a broad range of disciplines (eg, nurses, radiologists, physicians, and administrators), asking about past experiences with quality improvement projects as well as the current IPV screening project in the clinic. We learned that staff were knowledgeable about IPV and had a sustained commitment to, and experience with, IPV screening. However, clinic flow and the large number of patients seen on a daily basis needed to be important considerations in programme development; our intervention needed to minimize disruptions to current practices to avoid agitating staff and encourage buy-in and support of the new programme across the team.

3.2 | Implementation challenges of evidence-based IPV screening—the need for "technological enhancement"

A key step in Exploration is identifying a "usable" intervention and assessing how this fits with the setting. Unlike some evidence-based programmes that have been extensively tested, branded, and implemented using published protocols and materials (eg, predesigned handouts or evaluated curricula), IPV screening and response programmes are not uniform. Evidence of the necessary components of an effective intervention have been outlined,¹³ but because the characteristics of clinical and community settings are unique, the details of programmes differ. Thus, part of the planning process for any IPV screening programme will necessitate collaborating with staff

to develop the specific elements of an evidence-based practice that are realistic and appropriate for that particular setting.

While our fracture clinic offered several strengths (including staff committed to IPV screening), its physical structure created a particular impediment to evidence-based practices: lack of private spaces. Leveraging existing relationships with e-health specialists and building on emerging research using health "apps" to support IPV victims, 32-35 our team explored the possibility of adding a technology component to the programme. We envisioned an app that would enable patients to complete IPV screening on a computer or mobile device in a private location, communicate results to the clinic if they choose, and receive information and support electronically and/or in person (paper forthcoming). This would not only offer patients more control over the screening process but would also minimize delays in clinic flow, reducing staff burden and allowing them to focus on addressing patient concerns rather than confirming a positive disclosure for IPV. The technological enhancement that emerged from Exploration became a cornerstone of the screening programme, and ultimately, our implementation process slowed as its necessity became apparent.

3.3 | Creating a strong implementation team

As an urban, hospital-based fracture clinic where emergencies are common, staff—especially those who provide direct care to patients—had little time outside of clinic hours to participate in meetings. We tried to address this by identifying specific staff (based on their roles and responsibilities) whose input would be needed on the IST and identifying how this might change in later implementation stages. We set aside funding to compensate staff for time away from clinical duties and developed strategies for the IST to engage other clinic staff to build a sense of ownership of the project. As the need for technology enhancement became clear, the membership on our IST changed. We included members of our app development team to ensure that the design and implementation of the technology were integrated into the larger intervention planning process.

Ideally, we hoped to build the implementation capacity of the fracture clinic in general. Because the IST did not have the time to learn the implementation science process in as much depth as the research team did, we actively worked to avoid technical jargon during discussions while retaining the core elements of implementation science and the AIF. Initially, to maximize our time with the IST, the research team took on the labour-intensive work while IST input was sought at strategic points throughout the process. For example, we analysed data collected from the clinic's current screening practice, bringing the results back to the IST for discussion.

Despite our best intentions and attempts to carefully balance clinic ownership with time constraints, more than once we recognized that we had crossed the line from facilitating an engaged learning and cocreation process to merely presenting our clinical partners with information and asking them to confirm the direction of the project. This led us to revisit our process for facilitating meetings to make them more interactive and our findings less academic—for example, we created infographic-style "newsletters" for the IST to show the staff. EY- Journal of Evaluation in Clinical Practice

3.4 | Using our data to inform implementation

At the conclusion of Exploration, the IST was charged with deciding whether to continue on with the implementation process. The research team compiled a variety of primary and secondary data, meeting notes, our clinic observations, and the findings from the clinic's current screening practice to help inform the IST's decision. Using AIF's Hexagon Tool and its accompanying Discussion and Analysis Tool as a model, we designed an Exploration Summary Tool to organize our data according to a set of domains that NIRN has identified as critical to successful programme implementation: need, fit, resources, evidence, readiness, and sustainability (Table 2).³⁶ Each domain was informed by multiple components (see Figure 1 for examples of components included in the readiness domain), and after rating the strength of each component, we assigned each domain a score denoting the clinic's strengths and weaknesses. Using a colour-coded dashboard to easily summarize and communicate these conclusions, we presented our assessment to the IST. Items coloured green suggested areas in which the clinic had existing capacity, yellow indicated areas in need of strengthening, and red suggested low or no capacity. Dashboards were created for all six domains, and the overall results were summarized in a final hexagon wheel (Figure 2).

Initially, we completed this tool assuming that our screening would be conducted using a traditional, on-site approach (eg, using a written form or office-based tablet) (Figure 2A). After comprehensive discussions between the research team and the IST using this dashboard, it became apparent that conducting effective screening would be challenging without an enhancement that addressed both clinic flow and privacy issues.

Because we had moved forward with the development of a mobile IPV screening application in parallel with the implementation process, we decided to recreate the *Exploration Summary Tool* with the caveat

TABLE 2 Description of the domains in the Exploration Summary

 Tool^a
 Tool^a

Domain	Purpose of Each Category	
Need	Assess whether IPV screening addresses the needs of patients in the fracture clinic	
Fit	Assess whether IPV screening fits the structures and activities of the fracture clinic, as well as the priorities and values of staff and stakeholders	
Resources	Assess whether there are adequate resources to screen and respond to patients living with IPV in the fracture clinic	
Evidence	Assess whether there is strong evidence to guide screening and referral for IPV with this population	
Readiness	Assess whether comprehensive IPV screening is ready to be implemented in settings like the fracture clinic	
Sustainability	Assess whether there is capacity and support to sustain the screening programme over the long term	

Abbreviation: IPV, intimate partner violence.

 $^{\rm a}{\rm Tool}$ adapted from the National Implementation Research Network's Hexagon Tool. 35

that our mobile app would be part of the screening protocol. This second analysis showed that our overall strengths improved from yellow and red to mostly green (Figure 2B). These new results clearly gave the IST momentum to move forward, as it revealed previously concealed strengths that were only apparent with the addition of the technology enhancement. The IST concluded that once the app was developed, the clinic was ready to proceed to the next stage of the implementation process.

4 | DISCUSSION

By describing our process of using the AIF and the lessons we learned, our goal has been to illustrate the importance of investing in the early stages of implementation. We recognize the challenges this can present, especially in busy clinical settings where decisions are made quickly, action happens fast, and results are available in hours or days, rather than weeks or months. Yet the time spent discussing the role of the IST, analysing data from the early screening effort, and assessing implementation drivers generated more than good feelings and an evidence-based IPV screening protocol. By carefully examining the intervention as well as multiple aspects of the infrastructure into which it was being introduced (including through the eyes of the staff who would be most impacted by the changes), we gained greater control over those "drivers" of implementation, allowing us to avoid some of the pitfalls that led to previous failed attempts at IPV screening in this clinic. This is in line with other implementation science literature, which emphasizes the critical nature of the early stages of implementation,^{32,37} including the importance of building partnerships between key stakeholders and workers to ensure the "fit" between the selected intervention and the organization.^{23,37}

4.1 | Mapping our path

By forcing ourselves to systematically examine the difficult-to-observe aspects of context and intervention, we gathered evidence of the potential problems that would emerge across multiple levels. Towards the end of Exploration, we summarized the information gathered during our interviews, conversations with the IST, review of evidencebased screening practices, and our observations of the clinic, allowing us to create an Exploration Summary Tool that highlighted numerous areas of weakness or concern-initially, only one out of six domains was rated green. Thus, despite having both evidence and staff support for IPV screening, the IST was forced to carefully consider whether to proceed. In the past, enthusiasm to obtain the outcome (increased rates of patient screening) might have been enough to propel implementation (as evidenced by the initial paper-based screening process that was initiated before this project began), only to be led astray later by challenges. The use of empirical data to carefully and critically examine the entire system (the "inner context") in which the intervention will be embedded is a critical part of many implementation science frameworks,^{19,20,32} and as the complexity of both the system and the intervention increases, implementation teams may consider



FIGURE 1 An example of how the inclusion of graphics and a colour-coded dashboard was used to simplify and communicate complex findings to the Implementation Support Team during team meetings. Above, colour reflects the clinic's strength and level of acceptability for "readiness" in the Exploration Summary Tool: green (strong, existing capacity), yellow (may need strengthening, some weakness), and red (weak, low capacity)



FIGURE 2 Results of the Exploration Summary Tool before and after considering technology in intimate partner violence screening. A, Original results of Exploration displayed mostly yellows with some green and red, reflecting multiple areas in need of strengthening. B, After introducing technology, Exploration shifted towards mostly greens and some yellow, indicating now only one area in need of strengthening. Coloured dashboard indicates strength and level of acceptability in clinic for each category: green (strong, existing capacity), yellow (may need strengthening, some weakness), and red (weak, low capacity)

engaging in more rigorous modelling approaches that can evaluate the impacts of the intervention on the larger system prior to implementation (eg, see Zimmerman et al³⁸). Equally important is the willingness to share those data—and the responsibility for decision making—across the stakeholders. ²³

4.2 | Identifying alternate routes

While the IST clearly wanted to proceed with implementation, initially seeing multiple yellow areas on the dashboard led them to recognize that standard approaches to screening alone were not feasible and VILEY – Journal of Evaluation in Clinical Practice

that if they proceeded, the installation stage would be challenging. However, after completing the *Exploration Summary Tool* with our technology enhancement, our dashboard moved from yellow and red to mostly green. Again, had we not engaged in this meticulous process of examining strengths and weaknesses, we may not have prioritized the mobile screening component, which has become a cornerstone of our intervention. In fact, this decision led us to turn our attention temporarily away from screening implementation and towards the mobile app development, ensuring that it would be completed before we reached the initial and final implementation stages.

4.3 | Improving our driving

Using the AIF and other implementation science frameworks not only encouraged us to look for hidden factors that could make or break implementation, but it also forced us to pay attention to the process we were using to complete Exploration itself. We believe that this reflexive behaviour greatly improved the experience and will ultimately lead to a stronger and more sustainable intervention. Following the data collection, the research team asked the IST for feedback on the process during Exploration. Responses centred around three main themes: the challenges IST members faced with translating findings to other clinic staff; difficulties in balancing their competing priorities with a desire for greater involvement in decision making around the project; and frustration with the high level of detail and technical language researchers often used.

Several of these points were addressed during Exploration. The research team drafted a list of *frequently asked questions* (and answers) using plain language that IST members could share with staff. The questions focused on issues such as incorporating the technology (ie, app) into the screening process and how the process will benefit patients. We worked to focus on high-priority action items during IST meetings and to limit the amount of technical material discussed, instead of providing members with articles and websites that they could review if interested. Moving forward, we have committed to making the relationship between the IST and the research team one of collaborative cocreation and colearning.

5 | LIMITATIONS

The findings reported in this paper are in the form of "lessons learned," and some may be less generalizable than others. Yet, looking at the implementation literature across sectors, similar themes emerge. Institutional support, sufficient and ongoing training, staff investment and motivation, and systems-level factors have been cited as making or breaking implementation efforts in educational, social service, health care, and business environments, leading us to believe that our experiences and lessons are likely to be more common than unique.

That said, using an implementation science framework (whether the AIF or another one) itself is not without challenges. One, in particular, is the need for upfront investment. Our interest in implementation science led us to seek grant funding specifically for this purpose, including funding to offset the time clinic staff spent engaged in planning rather than tending to clinic responsibilities. More often, however, clinical improvement interventions are implemented with little or no additional funding, and even when financial resources are available, they are earmarked for specific supplies (software, hardware, educational tools, or marketing) or outside consultants. Rarely do grant-makers provide support to cover the extra staff costs associated with regular planning and team meetings, internal data collection, staff training, or pilot testing. Hence, there is understandable pressure to rush through the planning stages and not "waste time talking instead of doing."

Our implementation grant enabled our research team to provide the support necessary to coordinate the implementation process. Research staff conducted literature reviews and became versed in both implementation science and evidence-based IPV practices. We translated this information for the IST, adapted the AIF tools to meet clinic needs, and facilitated the IST meetings. We drafted the generic protocol that the IST adapted as the intervention and sought advice and support from external experts in the local domestic violence advocacy and research communities. Finally, we secured the resources to develop the technology enhancement that allowed the project to move forward. We acknowledge that this support largely enabled our success.

Much of what we have described in this article centre on what many in implementation science refer to as "the inner context," or the factors within an organization that influence successful intervention adoption and implementation.^{20,32} This is not to suggest that "outer context" factors were not relevant. Indeed, the larger hospital administration has been largely supportive of our efforts, and we can point to few social or political barriers we have encountered. This will not always be the case with all implementation projects.

By describing our experience in peer-reviewed and practitioneroriented publications, we aim to help other clinics shorten the time spent in these preimplementation stages. We wish to make our tools freely available, so others can build on and improve our methods, generate new evidence, and avoid duplicating our efforts (please contact the lead author for materials). We feel strongly that investing time and money in preimplementation work is critical to success. We call on funders and administrators to go beyond requiring the submission of implementation plans and instead provide the financial resources and support necessary for thoughtful, planned, evidence-based implementation processes.

6 | CONCLUSIONS

Initiating universal, evidence-informed IPV screening practices in a busy clinical setting is challenging under the best of circumstances. Wolff and colleagues describe a large health care system that has integrated domestic violence identification and response, but for many, addressing "wicked problems" continues to be a challenge.³⁹ Here, we have described our adaptation of the Active Implementation Framework to facilitate the early stages of such a programme in a busy, urban fracture clinic. Exploration ensured that both research and IST activities were intentional, rather than afterthoughts.

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Examining past experiences with implementation, documenting facilitators and challenges of IPV screening, and identifying areas for building capacity were all part of an invaluable process for a clinic that previously lacked the capacity to collect data and monitor progress. The lessons we learned—and have shared in this paper—about understanding the full clinic context were later used by the clinic to address other implementation strategies, including newly established, technology-enhanced data collection activities centred on patient outcomes (in fact, both applications will reside in tablets to be used by patients). These lessons are ones that we believe are also translatable to other organizations that are considering adopting comprehensive IPV screening processes, and we are committed to sharing the tools and processes we adapted so that other teams can build on and improve them.

In conclusion, undergoing this process reminded us of the importance of approaching implementation research as an opportunity for cocreation between researchers (or, in a different setting, "experts") and practitioners. Both are critical to ensure the rigour and relevance of implementation science processes for health care interventions.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

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REFERENCES

- Black MC, Basile KC, Breiding MJ, et al. The National Intimate Partner and Sexual Violence Survey (NISVS): 2010 Summary Report. Atlanta, GA: National Center for Injury Prevention and Control, Centers for Disease Control and Prevention; 2011.
- O'Campo P, Ahmad F, Cyria A. Role of healthcare professionals in preventing and intervening on IPV. In: Keeling J, Mason T, eds. Domestic Violence: A Multi-Professional Approach for Health Care Practitioners. Berkshire, England: Open University Press; 2008.
- 3. Family violence in Canada: a statistical profile. Ottawa, Canada; 2011.
- Nelson HD, Bougatsos C, Blazina I. Screening women for intimate partner violence: a systematic review to update the U.S. Preventive Services Task Force Recommendation. Ann Intern Med. 2012; 156(11):796-808. https://doi.org/10.7326/0003-4819-156-11-201206050-00447
- ACOG. ACOG committee opinion no. 518: intimate partner violence. Proc Obstet Gynecol. 2012;119(2):412.

- Canadian Orthopaedic Association–L'Association Canadienne d'Orthopédie Intimate partner violence position statement and best practice recommendations.
- Flintcraft AH, Hadley SM, Hendricks-Matthews MK, McLeer SV, Warshaw C. American Medical Association diagnostic and treatment guidelines on domestic violence. *Arch Fam Med.* 1992;1.
- Moyer V. Screening for intimate partner violence and abuse of elderly and vulnerable adults: U.S. Preventive Services Task Force recommendation statement. Ann Intern Med. 2013;158(6):478-486.
- Miller E, McCaw B, Humphreys BL, Mitchell C. Integrating intimate partner violence assessment and intervention into healthcare in the United States: a systems approach. J Womens Health. 2015;24(1):92-99. https://doi.org/10.1089/jwh.2014.4870
- Dawson L, Kates J. HIV, Intimate Partner Violence (IPV), and Women: New Opportunities Under the Affordable Care Act (ACA). Menlo Park, CA: Henry J. Kaiser Family Foundation; 2014.
- Glass N, Dearwater S, Campbell J. Intimate partner violence screening and intervention: data from eleven Pennsylvania and California community hospital emergency departments. J Emerg Nurs. 2001;27(2):141-149.
- O'Campo P, Kirst M, Tsamis C, Chambers C, Ahmad F. Implementing successful intimate partner violence screening programs in health care settings: evidence generated from a realist-informed systematic review. Soc Sci Med. 2011;72(6):855-866. https://doi.org/10.1016/j. socscimed.2010.12.019
- Conn LG, Young A, Rotstein OD, Schemitsch E. "I've never asked one question." Understanding the barriers among orthopedic surgery residents to screening female patients for intimate partner violence. *Can J Surg.* 2014;57(6):371-378. https://doi.org/10.1503/cjs.000714
- Ghandour RM, Campbell JC, Lloyd J. Screening and counseling for intimate partner violence: a vision for the future. J Womens Health. 2015;24(1):57-61. https://doi.org/10.1089/jwh.2014.4885
- Burton CW, Carlyle KE. Screening and intervening: evaluating a training program on intimate partner violence and reproductive coercion for family planning and home visiting providers. *Fam Community Health.* 2015;38(3):227-239.
- Ford-Gilboe M, Varcoe C, Wuest J, Merritt-Gray M. Intimate partner violence and nursing practice. *Fam violence Nurs Pract.* 2011; 2:115-154.
- 17. Ganley AL. Improving the health care response to domestic violence: a trainer's manual for health care providers. 1998.
- Bender AK. Using the consolidated framework for implementation research to increase provider screening for intimate partner violence in rural health clinics. Womens Health Issues. 2016;26(4):384-392.
- 19. Fixsen D, Naoom S, Blase K, Friedman R, Wallace F. Implementation research: a synthesis of the literature.; 2005.
- Damschroder LJ, Aron DC, Keith RE, Kirsh SR, Alexander JA, Lowery JC. Fostering implementation of health services research findings into practice: a consolidated framework for advancing implementation science. *Implement Sci.* 2009;4(1):50.
- Eccles MP, Mittman BS. Welcome to implementation science. Implement Sci. 2006;1(1):1. https://doi.org/10.1186/1748-5908-1-1
- Rapport F, Clay-Williams R, Churruca K, Shih P, Hogden A, Braithwaite J. The struggle of translating science into action: foundational concepts of implementation science. J Eval Clin Pract. 2018;24(1):117-126. https://doi.org/10.1111/jep.12741
- Naylor MD, Feldman PH, Keating S, et al. Translating research into practice: transitional care for older adults. *J Eval Clin Pract.* 2009;15(6):1164-1170. https://doi.org/10.1111/j.1365-2753.2009. 01308.x

- 24. Kirchner JE, Parker LE, Bonner LM, Fickel JJ, Yano EM, Ritchie MJ. Roles of managers, frontline staff and local champions, in implementing quality improvement: stakeholders' perspectives. *J Eval Clin Pract.* 2012;18(1):63-69. https://doi.org/10.1111/j.1365-2753.2010. 01518.x
- Schackman BR. Implementation science for the prevention and treatment of HIV/AIDS. J Acquir Immune Defic Syndr. 2010;55(Suppl 1): S27-S31. https://doi.org/10.1097/QAI.0b013e3181f9c1da
- 26. Decker MR, Frattaroli S, McCaw B, et al. Transforming the healthcare response to intimate partner violence and taking best practices to scale. *J Womens Health*. 2012;21(12):1222-1229.
- Bhandari M, Sprague S, Dosanjh S, et al. The prevalence of intimate partner violence across orthopaedic fracture clinics in Ontario. J Bone Jt Surg. 2011;93(2):132-141. https://doi.org/10.2106/jbjs.i.01713
- Praise Investigators. Prevalence of abuse and intimate partner violence surgical evaluation (PRAISE) in orthopaedic fracture clinics: a multinational prevalence study. *Lancet*. 2013;382(9895):866-876. https:// doi.org/10.1016/S0140-6736(13)61205-61202
- Correa N, Davloor W, Steward E, Velonis A. Reaching Out: Asking about Partner Violence in Toronto Teaching Hospitals. Toronto, ON: St. Michael's Hospital, Centre for Research on Inner City Health; 2015.
- Blanchard C, Livet M, Ward C, Sorge L, Sorensen T, McClurg MR. The active implementation frameworks: a roadmap for advancing implementation of comprehensive medication management in primary care. *Res Social Adm Pharm.* 2017;13(5):922-929.
- Tabak RG, Khoong EC, Chambers DA, Brownson RC. Bridging research and practice: models for dissemination and implementation research. *Am J Prev Med.* 2012;43(3):337-350. https://doi.org/10.1016/j. amepre.2012.05.024
- Aarons GA, Hurlburt M, Horwitz SM. Advancing a conceptual model of evidence-based practice implementation in public service sectors. Adm

Policy Ment Heal Ment Heal Serv Res. 2011;38(1):4-23. https://doi.org/ 10.1007/s10488-010-0327-7

- 33. Ogden T, Fixsen DL. Implementation science. Z Psychol. 2015.
- Bertram RM, Blase KA, Fixsen DL. Improving programs and outcomes: implementation frameworks and organization change. *Res Soc Work Pract.* 2015;25(4):477-487. https://doi.org/10.1177/104973151 4537687
- Blase K, Fixsen D. ImpleMap: exploring the implementation landscape National Implementation Research Network (NIRN); 2013.
- 36. Blase K, Kiser L, Van Dyke M. The hexagon tool: exploring context; 2013.
- Powell BJ, Beidas RS. Advancing implementation research and practice in behavioral health systems. Adm Policy Ment Heal Ment Heal Serv Res. 2016;43(6):825-833. https://doi.org/10.1007/s10488-016-0762-1
- Zimmerman L, Lounsbury DW, Rosen CS, Kimerling R, Trafton JA, Lindley SE. Participatory system dynamics modeling: increasing stakeholder engagement and precision to improve implementation planning in systems. Adm Policy Ment Heal Ment Heal Serv Res. 2016;43(6):834-849. https://doi.org/10.1007/s10488-016-0754-1
- Young-Wolff KC, Kotz K, McCaw B. Transforming the health care response to intimate partner violence: addressing "wicked problems". Jama. 2016;315(23):2517-2518. https://doi.org/10.1001/ jama.2016.4837

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